

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

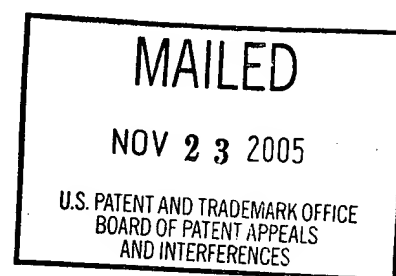
**UNITED STATES PATENT AND TRADEMARK OFFICE**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Ex parte JASPER D. RINE,  
VICTOR L. BOYARTCHUK, and  
MATTHEW N. ASHBY

Appeal No. 2005-1341  
Application No. 09/165,460

ON BRIEF



Before WILLIAM F. SMITH, ELLIS, and GRIMES, Administrative Patent Judges.

WILLIAM F. SMITH, Administrative Patent Judge.

**DECISION ON APPEAL**

This is an appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 31, 35, 37 – 39, 43, 45, and 46. Claims 31 and 35 are representative of the subject matter on appeal and read as follows:

31. A recombinant expression vector comprising a promoter operably linked to an expressed polynucleotide which encodes a polypeptide and hybridizes under highly stringent conditions to a nucleic acid consisting of SEQ ID NO:1, wherein said polypeptide mediates the proteolytic removal of an AAX tripeptide from a prenylated CAAX protein and said highly stringent conditions comprise hybridization and wash conditions selected to be 5° C lower than the thermal melting point (T<sub>m</sub>) for said nucleic acid at a defined ionic strength and pH.

35. A recombinant expression vector comprising a promoter operably linked to an expressed polynucleotide which encodes a polypeptide and hybridizes under highly stringent conditions to a nucleic acid consisting of SEQ ID NO:3, wherein said polypeptide mediates the proteolytic removal of an AAX tripeptide from a prenylated CAAX protein and said highly stringent conditions comprise hybridization and wash conditions selected to be 5° C lower than the thermal melting point (T<sub>m</sub>) for said nucleic acid at a defined ionic strength and pH.

The references relied upon by the examiner are:

Nozaki et al. (Nozaki)                      4,997,767                      Mar. 5, 1991

Lye et al. (Lye), GenBank accession number Z49260, May 16, 1995

Rose et al. (Rose), GenBank accession number Z49617, October 6, 1995

Claims 31 and 39 stand rejected under 35 U.S.C. § 103(a) with the examiner relying upon Rose and Nozaki as evidence of obviousness. Claims 35, 37, 38, 43, 45, and 46 also stand rejected under this section of the statute with the examiner relying upon Lye and Nozaki as evidence of obviousness. We reverse.

### Discussion

The technology described in the specification involves “two families of genes which encode polypeptides that mediate the proteolytic removal of an AAX tripeptide from a prenylated CAAX protein in a cell. In yeast, the families of genes are represented by the genes AFC1 and RCE1 which encode the polypeptides Afc1p and Rcelp, respectively.” Specification, page 3, lines 10 – 14. Appellants also state that one class of embodiments of the present invention includes a vector that “provides a nucleic acid sequence which hybridizes under stringent conditions to a nucleic acid

selected from the group consisting of the AFC1, and the RCE1 genes. Exemplar[y] nucleic acids with the desired hybridization properties include those represented by the sequences of SEQ ID NO:1 and SEQ ID NO:3.” Id., lines 21 – 25.

As seen, claims 31 and 35 are directed to the just described embodiments as they are directed to recombinant expression vectors which include, inter alia, a polynucleotide that hybridizes under highly stringent conditions to a nucleic acid consisting of SEQ ID NO:1 or SEQ ID NO:3, respectively.

There are two issues raised in this appeal. The first issue is whether the publications identified by the examiner as Lye and Rose are prior art to the claims on appeal. The second issue is whether there is proper reason, suggestion, or motivation to combine the teachings of Lye and Rose, respectively, with those of Nozaki in order to arrive at the subject matter of the claims on appeal. Since we agree with appellants that the examiner has not identified a proper reason, suggestion, or motivation to combine the applied references in a manner needed in order to arrive at the claimed subject matter, we need not decide the first issue.

Each of Rose and Lye are printouts from the GenBank database. There is no dispute that the nucleic acid sequence described in Rose corresponds to that of SEQ ID NO:1 of this application and that of Lye corresponds to SEQ ID NO:3 of this application. It also undisputed that neither Rose nor Lye describe the function of any protein that may be encoded by the described nucleic acid sequences. All that Rose

and Lye tell a person of ordinary skill in the art is that the nucleic acid sequences are yeast derived and may define an open reading frame (ORF).

The examiner's conclusion in regard to combining the disclosures of Rose and Nozaki and the disclosures of Lye and Nozaki are the same. The examiner's reasoning is exemplified by the following passage setting forth the examiner's conclusion of obviousness in regard to the subject matter of claims 31 and 39:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make an expression vector, as taught by Nozaki et al., with the polynucleotide of Rose et al. and transform a host cell for the benefit of recombinantly producing sufficient amounts of the corresponding protein for functional characterization and determination of its biological role. A person of ordinary skill in the art is highly motivated to characterize and determine the biological role of a yeast (*S. cerevisiae*) protein since yeast is a unicellular eukaryote widely studied in the art for identification of proteins and/or biological processes which may be found in higher eukaryotes including humans. One of ordinary skill in the art has a reasonable expectation of success at making an expression vector with the polynucleotide of Rose et al. and transforming a host cell with such vector since Nozaki et al. teaches an expression vector which can be used in *E. coli* and yeast as well as the transformation of host cells with such vector. Therefore, the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

Examiner's Answer, page 4, 1<sup>st</sup> paragraph.

Appellants disagree with the examiner's conclusion, arguing that "[a]bsent a prior art suggestion that SEQ ID NO:1 or 3 encodes a protein of determined function sufficient to motivate the isolation, cloning and expression of such SEQ ID NO using techniques such as those of [Nozaki], the claims are in compliance

with 35USC103(a).” Supplemental Brief on appeal received January 13, 2004,  
page 6. As explained by appellants,

In the abstract, the Examiner’s argument sounds great: biologists like to know about protein function, here’s a potentially encoded protein, so it would be obvious to make the protein because then we could study it, figure out if its real, and determine its function. Unfortunately, that analysis is divorced from the reality of how gene and protein function is and can be determined. That analysis ignores that fact that without some a priori knowledge of what the predicted protein does, there simply no functional characterization that can be logically performed on a completely blank protein, and no rational yeast biologist is going to go to the trouble of making a computer-predicted protein when she has nothing meaningful to do with it once she expresses it.

Reply Brief, page 6, last paragraph.

We find that appellants have the better argument.

In our view the examiner’s so-called motivation to combine the references is too abstract and generalized. While no doubt scientists are curious individuals, a predecessor of our reviewing appellate court has indicated that “abstract, theoretical or academic considerations” are insufficient to establish the proper reason, suggestion or motivation under 35 U.S.C. § 103. In re Steminski, 444 F.2d 581, 586, 170 USPQ 343, 347 (CCPA 1971). Furthermore, that court has also stated that “motivation under 35 U.S.C. § 103 is not abstract, but practical.” In re Gyurik, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979). Finally, relying upon “undirected skill of one in the pertinent art” is impermissible. In re Kratz, 592 F.2d 1169, 1175, 201 USPQ 71, 76 (CCPA 1979).

Appeal No. 2005-1341  
Application 09/165,460

Here, the examiner's identified motivation to combine the relied upon references is abstract and undirected. Thus, on this record we find that the examiner has failed to establish a prima facie case of obviousness.

**The examiner's decision is reversed.**

REVERSED

Walter F. M. 12

William F. Smith  
Administrative Patent Judge

Ellis

Joan Ellis  
Administrative Patent Judge

Er. Gini

Eric Grimes  
Administrative Patent Judge

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Appeal No. 2005-1341  
Application 09/165,460

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